MEDIVATORS™

ENDO

stratus™

IRRIGATION PUMP and CO_2 INSUFFLATOR

IN-SERVICE GUIDE

FOR FACILITY USE ONLY

Staff Name: _____

Training Date: _____

Trainer: _____

MEDIVATORS
A Cantel Medical Company

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EGA-501CO2 Insufflator

Insufflator Front Panel:	
1. On/Off Button functions properly and actuates to turn pump on/off.	
2. H20 button remains green to indicate all heating capabilities are functioning properly. It will turn flash blue if the heater is unplugged.	
3. CO2 button remains green to indicate all CO2 functions are connected properly. It will turn blue if the flow is off or the pressure source is not connected.	
4. Flow rate knob should move freely without hesitation.	
5. H, M, L letters should light up with each setting.	
6. Push the knob OR turn past the L setting to stop the flow of CO2.	
7. “Low Pressure” is flashing when CO2 source is turned off or not attached.	
Bottle Warmer:	
1. Securely fastened to the base of pump	
2. Connection is secure and heats properly.	
3. Bottle fits securely in holder once wing nut is tightened.	

SYSTEM SETUP

EGA-500 Irrigation Pump

1. Attach the bottle holder and base to the device; plug the heater cable into the rear of the device.	
2. Plug the power cord into the rear of the device and set the device on the endoscopy cart, ensuring that there is clearance to insert and remove bottle.	
3. Attach the pump head and foot pedal to the front of the device.	

EGA-501 CO2 Insufflator

1. Attach the bottle holder and base to the device; plug the heater cable into the rear of the device.	
2. Plug the power cord into the rear of the device and set the device on the endoscopy cart, ensuring that there is clearance to insert and remove the bottle.	
3. Attach input hose to the rear of the device and then to the source (tank or wall).	

OPERATOR CONTROL

EGA-500 Irrigation Pump

1. Flow rate control	
2. Foot pedal activation	
3. Prime feature. It can be stopped by opening the pump head, pressing the button, or pressing the foot pedal.	
4. Loading pump head. Motor will not turn while the pump head is open.	
5. Water warming. Prewarming is required.	

EGA-501 CO2 Insufflator

1. Flow rate control. System always powers up in “off”. Pressing knob stops flow. Flow rates imitate Olympus light source’s air pump.	
2. Low pressure light: When flashing, flow will still continue until the tank is fully depletedis not stopped.	
3. Water warming: Prewarming is required.	
4. CO2 warming: The heater is disabled (blue steady light) when the flow is turned off or the low pressure light is on.	

SYSTEM OPERATIONS

EGA-500 Irrigation Pump

Startup	
1. Verify power is on.	
2. Turn on water warmer if desired.	
Daily Service	
1. Load tube set (EndoGator® or Hybrid)	
2. Press the prime button to prime the endoscope	
Pre-procedure	
1. Prime the endoscope by pressing the prime button.	
Procedure	
1. Adjust flow rate if needed.	
2. If the bottle needs to be replaced, follow instructions on tube set IFU regarding use of sterile technique.	
End of Day Shutdown	
1. Dispose of bottle and tube set.	
2. Turn off power.	

EGA-501 CO2 Insufflator

Startup	
1. Verify power is on.	
2. Turn on water warmer if desired.	
3. Turn on CO2 source; verify “Low Pressure” light turns off.	
Daily Service	
1. Connect 100551 Endo SmartCap® CO2 source tubing to CO2 outlet and Endo SmartCap® or EndoGator® Hybrid according to 100551 and Endo SmartCap® (or Hybrid) directions.	
Preprocedure	
1. Turn on CO2 flow according to desired flow and turn on CO2 heater if desired.	
2. Prime endoscope lens rinsing water channel and verify insufflation gas by bubbling.	
3. Note that warming a bottle from room temperature to body temperature will take over an hour. Water bottles should be prewarmed.	
4. CO2 won’t flow when display indicates L, M, or H status	
5. Check for adequate source pressure. Be sure that the source’s valve is open.	
6. Check to see whether the low pressure light is on. This would indicate that there is insufficient source pressure.	
7. Check for clogs in the CO2 output tubing flow path.	
CO2 isn’t warm	
1. Check the temperature at the output of the device; it is easier to detect the difference at that point.	
2. Note that the CO2 is only warmed to body temperature. It may not feel noticeably “warm” to some people, depending on sensitivity.	
3. A solid blue activation switch when the feature is first turned on indicates that the Low Pressure light is on or the flow rate is turned off. Ensure sufficient source pressure is present. Ensure that the flow is turned on.	
End of Day Shutdown	
1. Dispose of bottle and tube set.	
2. Turn off power.	
3. Turn of CO2 gas source.	

MAINTENANCE TROUBLESHOOTING

Pump won't turn on
1. Be sure you are pressing the button fully. There is a 'click' sound before the button is pressed enough to latch.
Pump motor won't turn
1. Check flow rate setting
2. Be sure that pump head is fully locked onto the faceplate bracket
3. Be sure that pump head is fully closed
4. If the foot pedal won't start the motor, use the prime button to determine whether the foot pedal or the internal switch is bad.
5. Try a foot pedal from a different pump. (Pumps with similar foot pedals include EGP-100 and Olympus OFP-1.)
6. Not all pump heads are interchangeable even though they may fit. Be sure that the pump head is labeled "Endo Stratus Irrigation Pump".
7. Remove the pump head and touch a magnet to the small screw on the face plate. The motor shaft should turn when the prime button is pressed.
Water warmer not warming
1. The bottom of the warmer should be warm to the touch one minute after pressing the water warmer activation switch.
2. If the water warmer activation switch is blue when the feature is first turned on (and cold), ensure that the water warmer cable is plugged into the rear panel connector.
3. Note that warming a bottle from room temperature to body temperature will take over an hour. Water bottles should be prewarmed.
Pump motor turns for some time when the foot pedal is pressed and then stops.
1. The foot pedal may have a leak. Submerge it in water and check whether bubbles come from the joint between the top rubber and the bottom rigid part.
Insufflator won't turn on
1. Be sure you are pressing the power button fully. There is a 'click' sound before the button is pressed enough to latch and the button remains pressed in. .
Water warmer not warming
1. The bottom of the warmer should be warm to the touch one minute after pressing the water warmer activation switch.
2. If the water warmer activation switch is flashing blue, ensure that the water warmer cable is plugged into the rear panel connector.

Pump Head Cartridge:
1. On/Off Button functions properly and actuates to turn pump on/off.
2. H2O button remains green to indicate proper functionality. It will turn blue if the heater is unplugged.
3. Explanations of the priming function. Button remains lit while priming only.
4. Flow rate knob should move freely without hesitation
Foot Pedal:
1. Attaches securely to the pump
2. Activates pump immediately upon depression.
3. Deactivates as soon as pressure is released from pedal.
Bottle Warmer:
1. Securely fastened to the base of pump
2. Connection is secure and heats properly.
3. Bottle fits securely in holder once wing nut is tightened.
CO2 tank drained while the insufflator was not in use.
1. Check for leaks where the source hose connects to the rear panel of the EGA-501 and the source. Flare fittings can be checked for leaks using a small amount of soapy water, taking care to prevent water from reaching the electrical connections of the EGA-501 or any other equipment. If leak is detected, tighten the connection additionally by hand until the leak stops. According to SAE J512, the recommended torque settings for the flare fitting are 10 to 11 N•m or 84 to 97 in•lbs.
2. Ensure that the flow rate setting is turned off when the Endo SmartCap is not connected to an endoscope. Both of the internal valves are closed when the flow rate setting is turned off.
3. Ensure that the device is turned off when the device won't be used soon. Both internal valves are closed when the device is turned off.
4. Turn off the source valve (at the wall or the tank) after the last procedure of the day. While every EGA-501 is tested to ensure leak-free performance, a very small leak may exist in any high-pressure pneumatic system.

INTENDED USE AND GUIDELINES

Intended Use

1. EGA-500 Irrigation Pump – Irrigation Delivery system	
2. EGA-501 CO2 Insufflator – Medical CO2 delivery system	

PRODUCT FAMILIARIZATION

EGA-500 Irrigation Pump Components and Their Functions

1. Irrigation Pump Unit - facilitates irrigation delivery	
2. Pump Unit base – connects to irrigation unit and securely attaches water bottle holder	
3. Water bottle holder/warmer – plugs to rear of irrigation unit to incorporate water warming feature	
4. Tool kit – includes screws and Allan wrenches to attach water bottle holder to the base and the base to the unit.	
5. Peristaltic pump head – attaches to pump for irrigation delivery	
6. Power cord	

Consumables / Accessories

1. 100130 EndoGator® irrigation tubing. The 200230 irrigation tubing is not compatible with this unit.	
2. 1006## and 1006## EndoGator® Hybrid tube sets. The 1006## and 1006## are not compatible with this unit.	
3. 1006## and 1006## tubing kits. The 1006## and 1006## tubing kits (with 200230 tube sets) are not compatible with this unit.	

EGA-501 CO2 Insufflator Components and their Functions

1. CO2 Insufflator Unit - facilitates CO2 delivery	
2. Insufflator Unit base – fastens to insufflator unit and securely attaches water bottle holder	
3. Water bottle holder/warmer – plugs to rear of insufflator unit to incorporate water warming feature	
4. Tool kit – includes 2 sets of screws and 2 sets of Allan wrenches to attach water bottle holder to the base and the base to the unit.	
5. Power cord	
IF CO2 SOURCE IS A TANK: 6. High Pressure Tank hose (thin with twin connections) to attach to the Insufflator unit and the source	
7. Tank yoke to secure hose and maintain CO2 flow	
IF CO2 SOURCE IS FROM A WALL SUPPLY: 8. Low pressure tank hose (thicker rubber tubing) with brass end to connect to the insufflator and a silver end to connect to the wall.	

Consumables / Accessories

1. All CO2 Endo SmartCap® tube sets.	
2. 100551 CO2 source tubing. This is needed for use with the CO2 Endo SmartCap® products, but not for the Hybrid tube sets.	
3. All EndoGator® Hybrid tube sets. However, note that the choice of EndoGator® Hybrid must take into account the irrigation pump.	

SYSTEM FUNCTIONS

EGA-500 Irrigation Pump

Irrigation Pump Front Panel:	
1. On/Off Button functions properly and actuates to turn pump on/off.	
2. H2O button remains green to indicate proper functionality. It will turn blue if the heater is unplugged.	
3. Explanations of the priming function. Button remains lit while priming only.	
4. Flow rate knob should move freely without hesitation.	
Procedure	
1. Adjust flow rate if needed	
2. If the bottle needs to be replaced, follow instructions on tube set IFU regarding use of sterile technique.	
3. If the CO2 flow is stopped for any reason, turn on the air pump to maintain pressure in the air/water system any time the endoscope is in the patient.	